

# Healthy animals for healthy food

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RESEARCH  
PROGRAM ON  
Livestock and Fish



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Agriculture for  
Nutrition  
and Health

## Zoonoses, food-borne diseases and health in low/middle income countries – from knowledge to action

- Healthy animals for healthy food
- Food safety assessment and challenges along small scale pig systems in Vietnam
- Rift Valley fever virus seroprevalence among ruminants and humans in Northeast Kenya
- *Erysipelothrix rhusiopathiae* infections in pigs and raw pork handlers in Kamuli District, Eastern Uganda
- Microbiological safety of milk and processing and consumption behaviour in pastoral areas in southern Ethiopia



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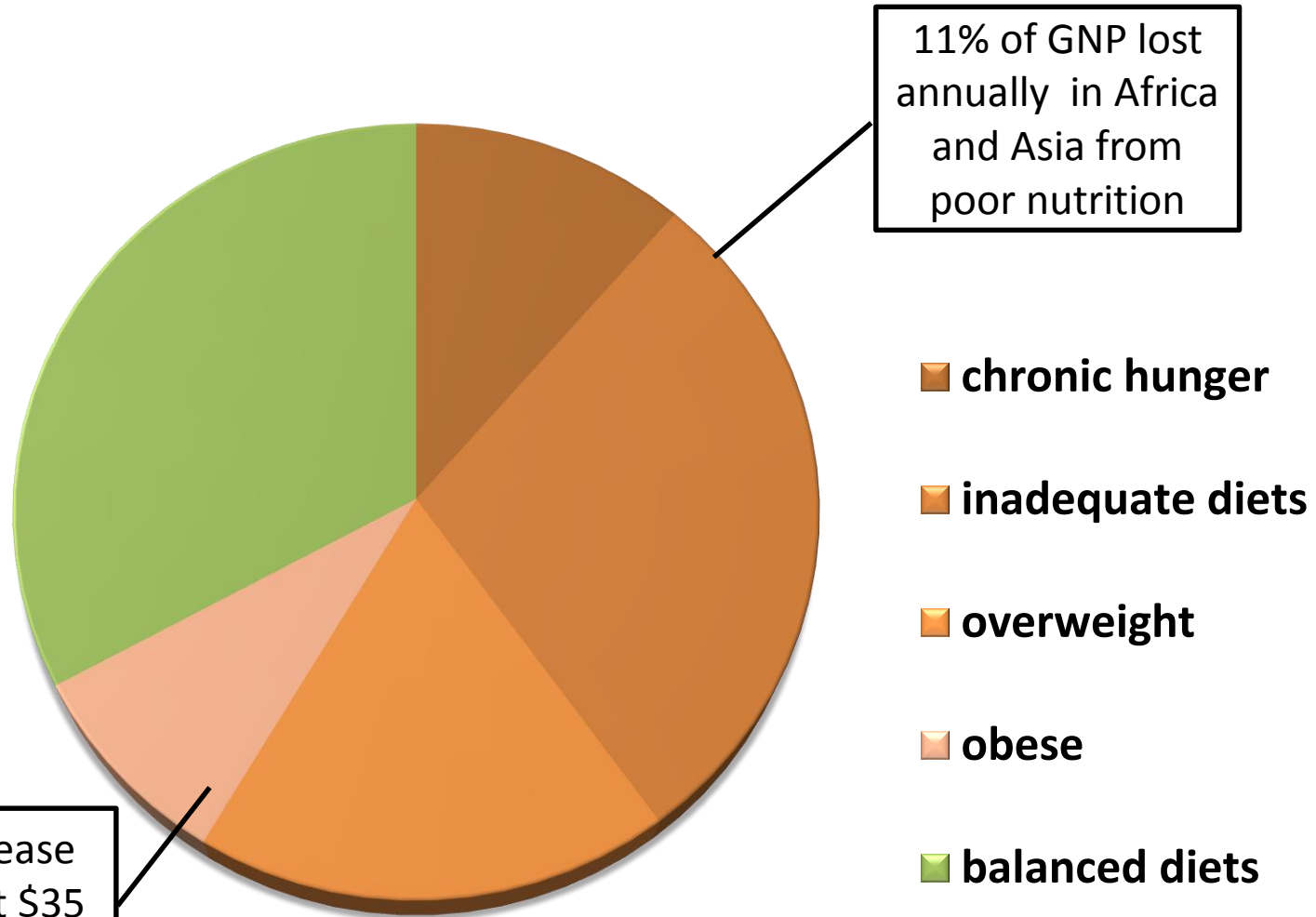


RESEARCH  
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Livestock and Fish

*More meat, milk and fish by and for the poor*

In collaboration with a range of national and international partners

# Nutritional divides among 7 billion people today

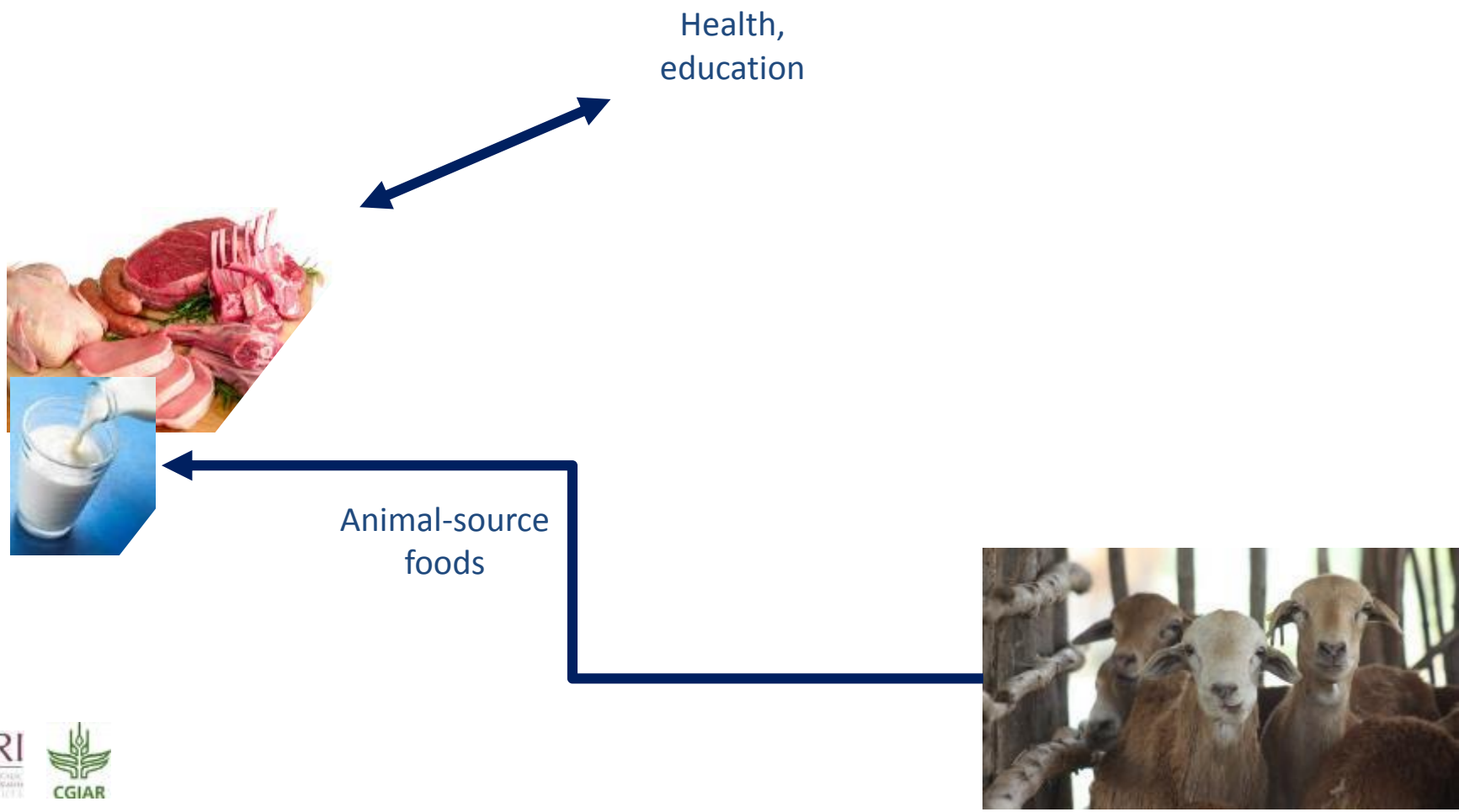


# Healthy animals for healthy food

## Challenges

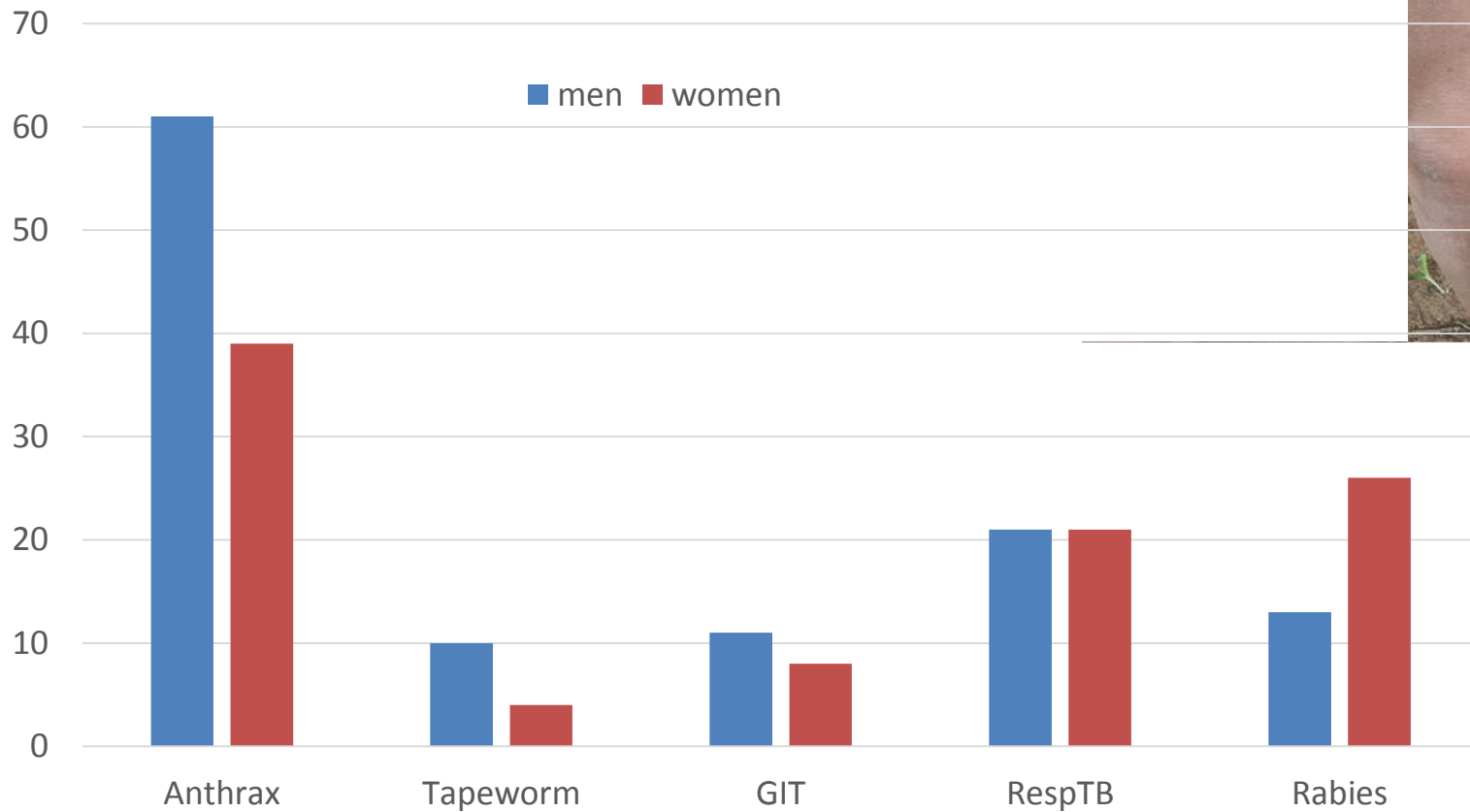
- Food security: increasing population, increasing inequalities in access to ASF
- Environmental footprint of livestock production, climate change
- Emerging/re-emerging diseases
- Zoonoses, food safety

# Animals and human nutrition

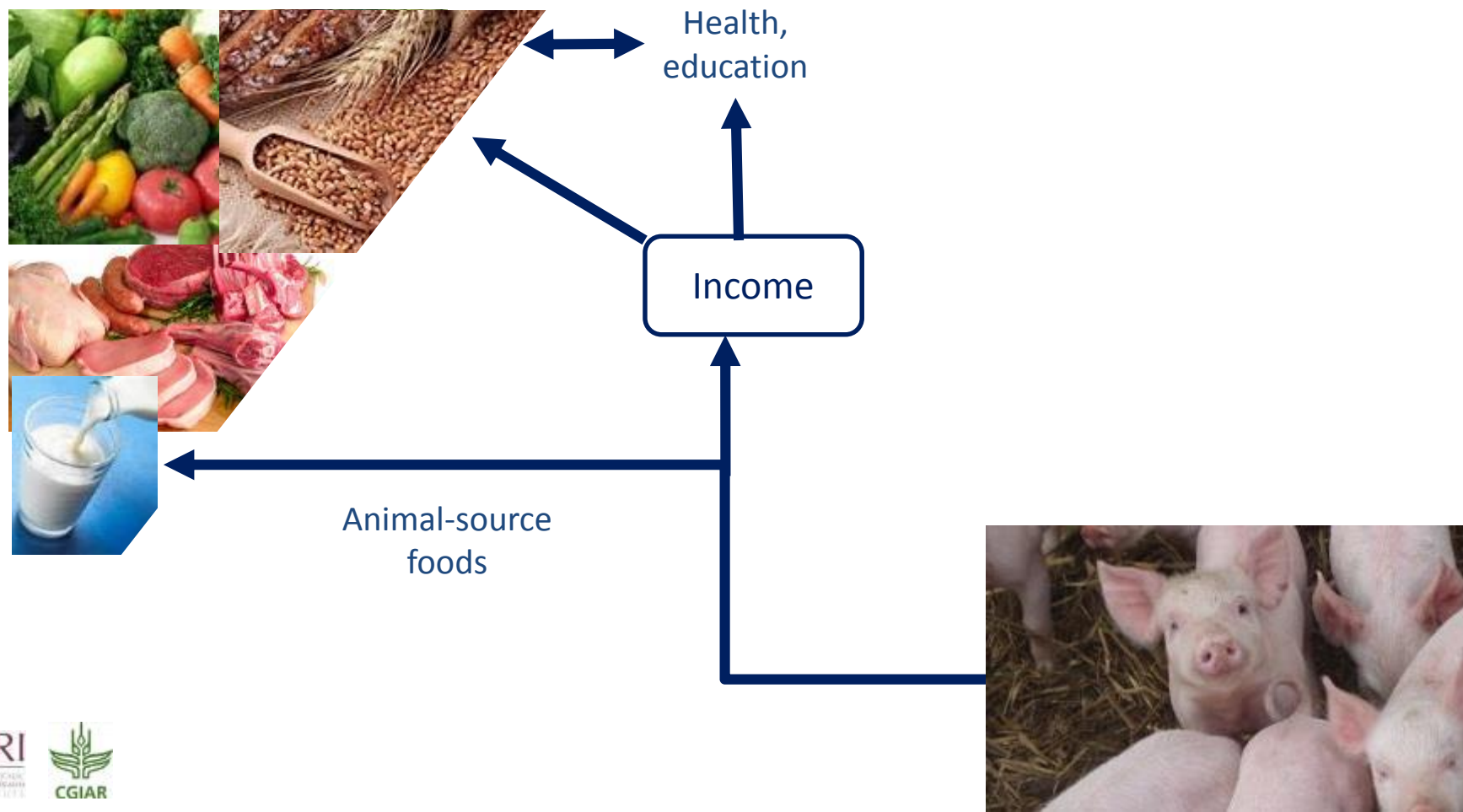


# Awareness zoonoses

## Example Ethiopia



# Animals and human nutrition





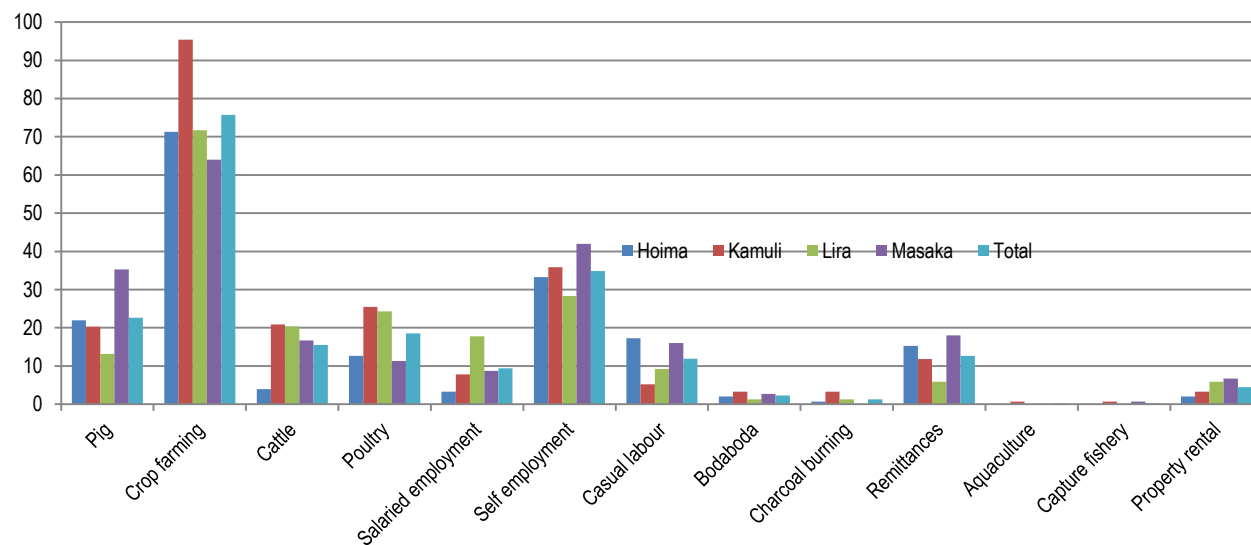
# Use of income from livestock

## Example Pig production in Uganda

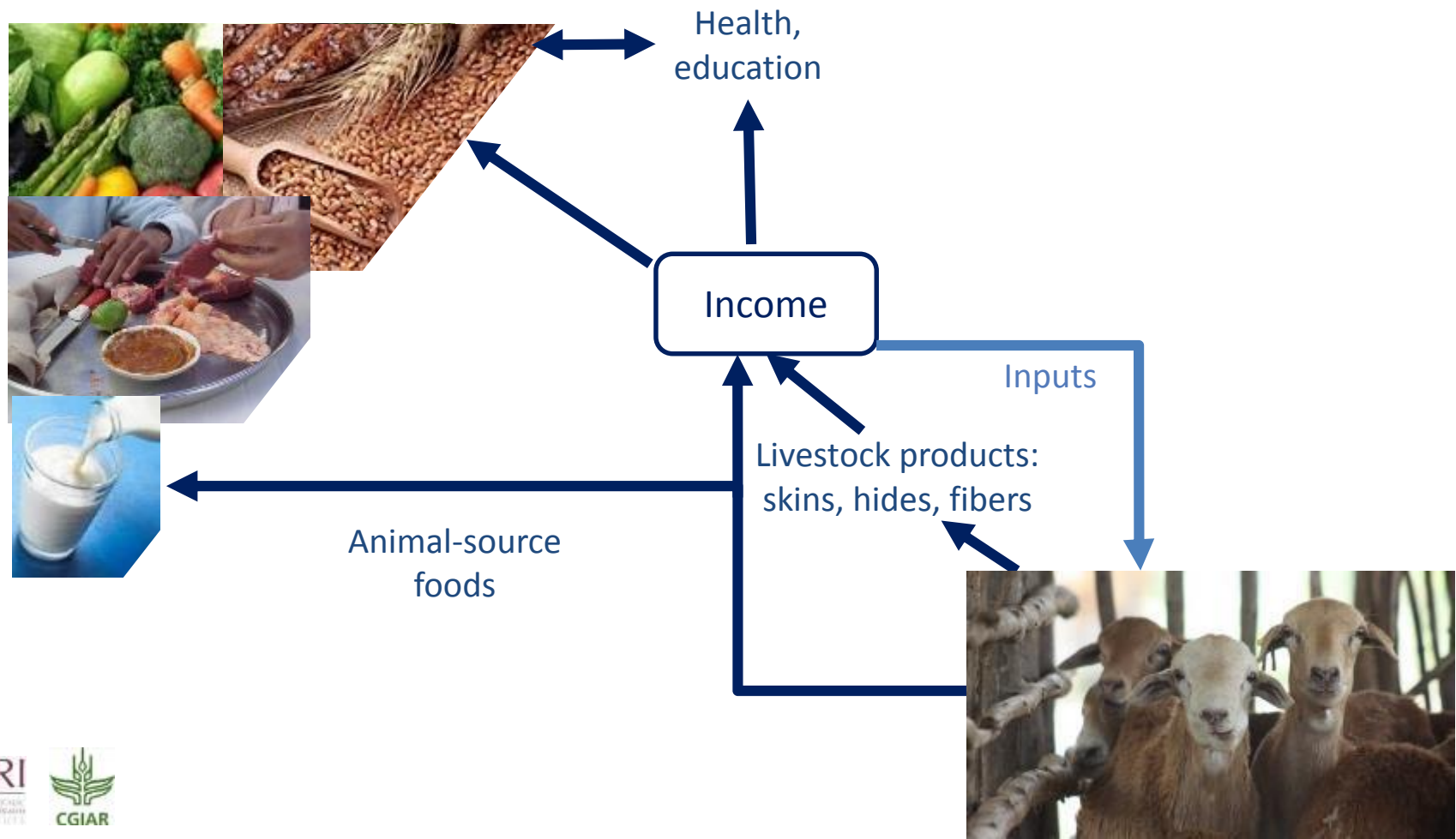


- Low ASF consumption
- Pigs contributes 20-35% to income
  - Education
  - Inputs to pig production
  - Buy non animal source foods
  - Buy meat (incl. pork)

Source: Kabahenda et al, 2015, MorePORK project

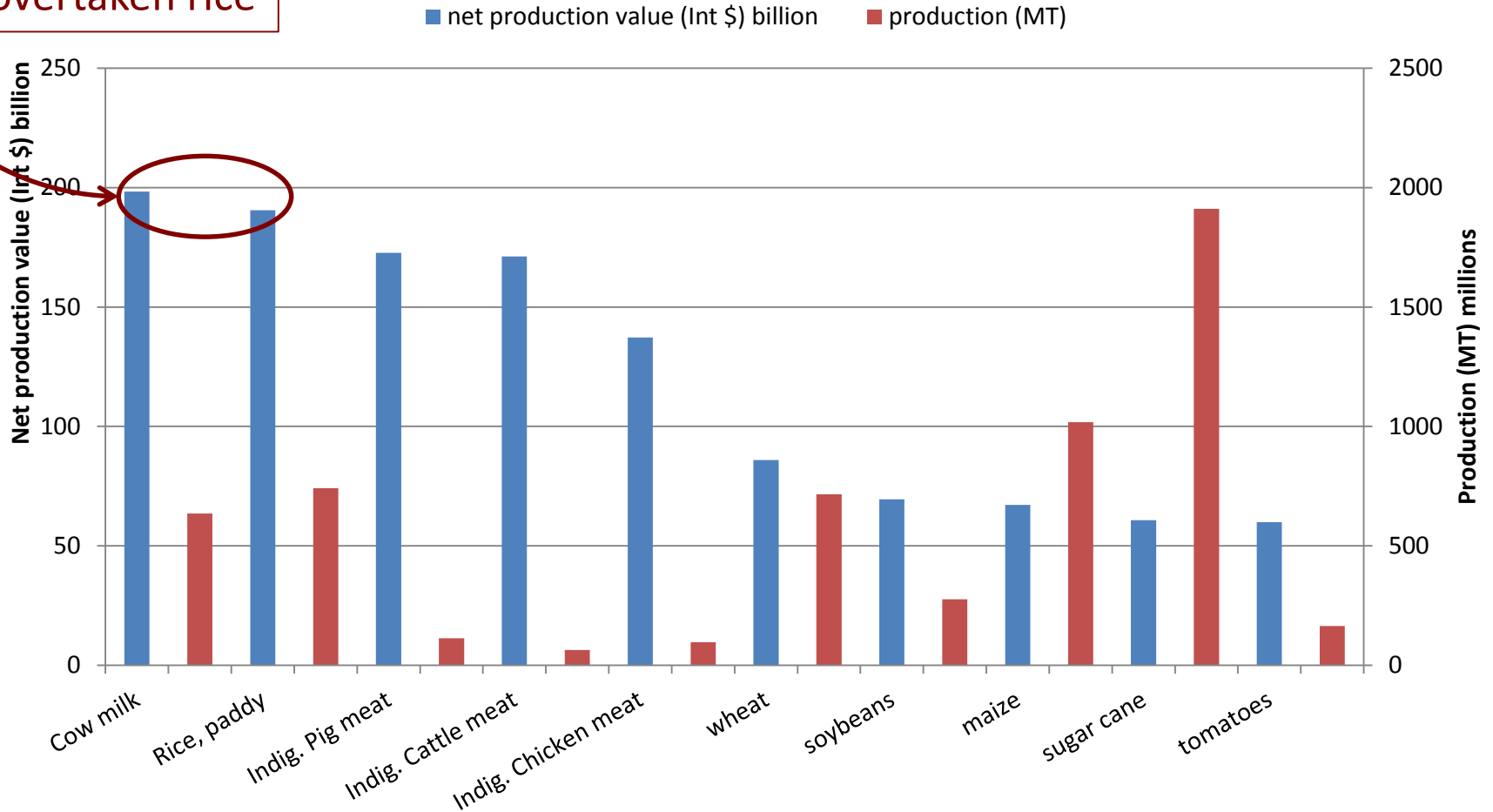


# Animals and human nutrition



# Animal source foods: 4 of 5 highest value global commodities

Cow milk has overtaken rice

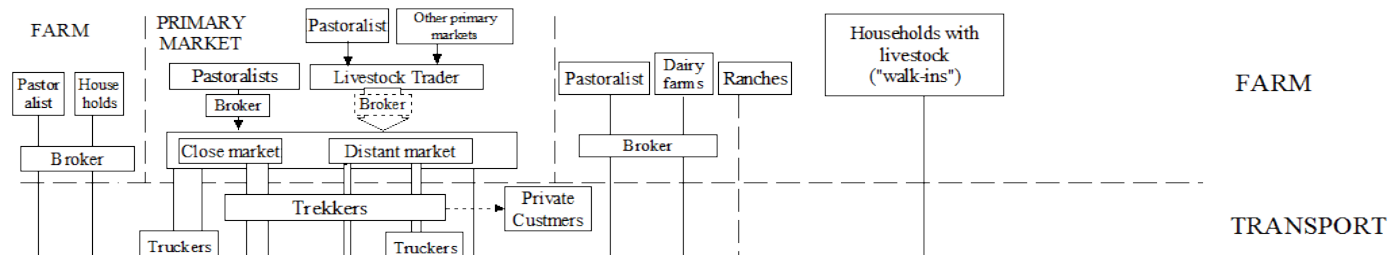


# Food system analysis

## Mapping analysis of meat VC in Nairobi

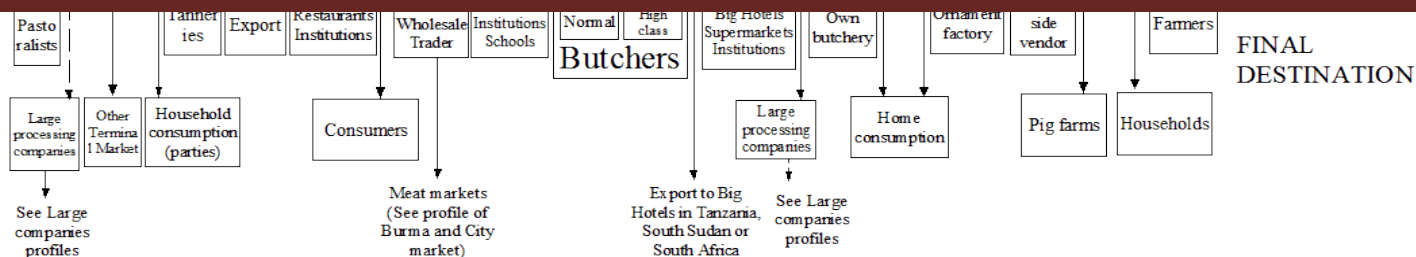
- people and product profiling (interactions of people and products),
- geographical (routes of animals and products)
- temporal mapping (seasonal fluctuations)

## Less Integrated Terminal Markets



## Major themes emerging from analysis of governance leading to risks

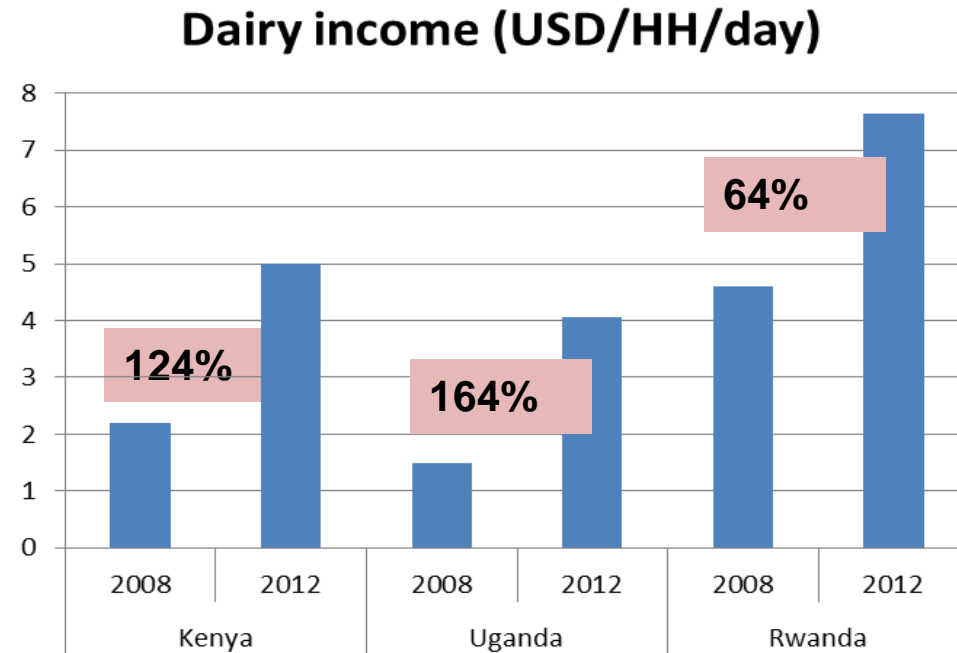
- Inadequate business models
- Competition inequality
- Lack of incentives for cold chain (consumer preferences)
- Control gaps (meat transport)
- Lack of enforcement (inspection)



# Business models

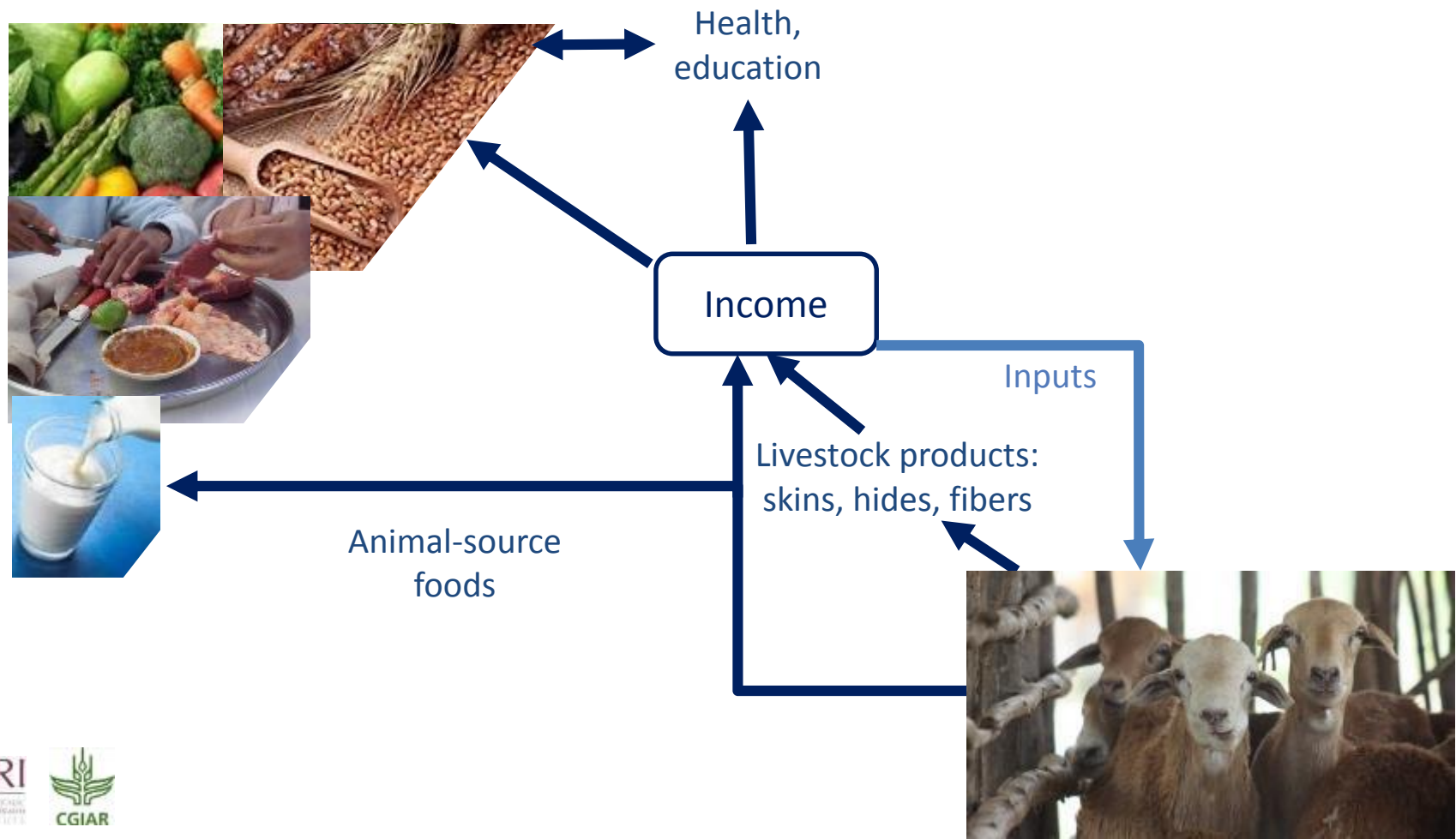
## example dairy business hubs in Kenya, Rwanda, Uganda

- Built around an output service (bulking or chilling milk)
- Promote business linkages between smallholder dairy producers and private or public providers of inputs (feeds, veterinary services, AI, extension)
- “check-off” system (credit based on payment for milk deliveries) or local financial institutions
- Business development approach to facilitate process
- Ensures sustainable access to input services



Source: EADD project

# Animals and human nutrition



# Productivity

## example small ruminants in Ethiopia

Low productivity: lambing rate 1.2/ewe, carcass weight of 10kg, high lamb mortality



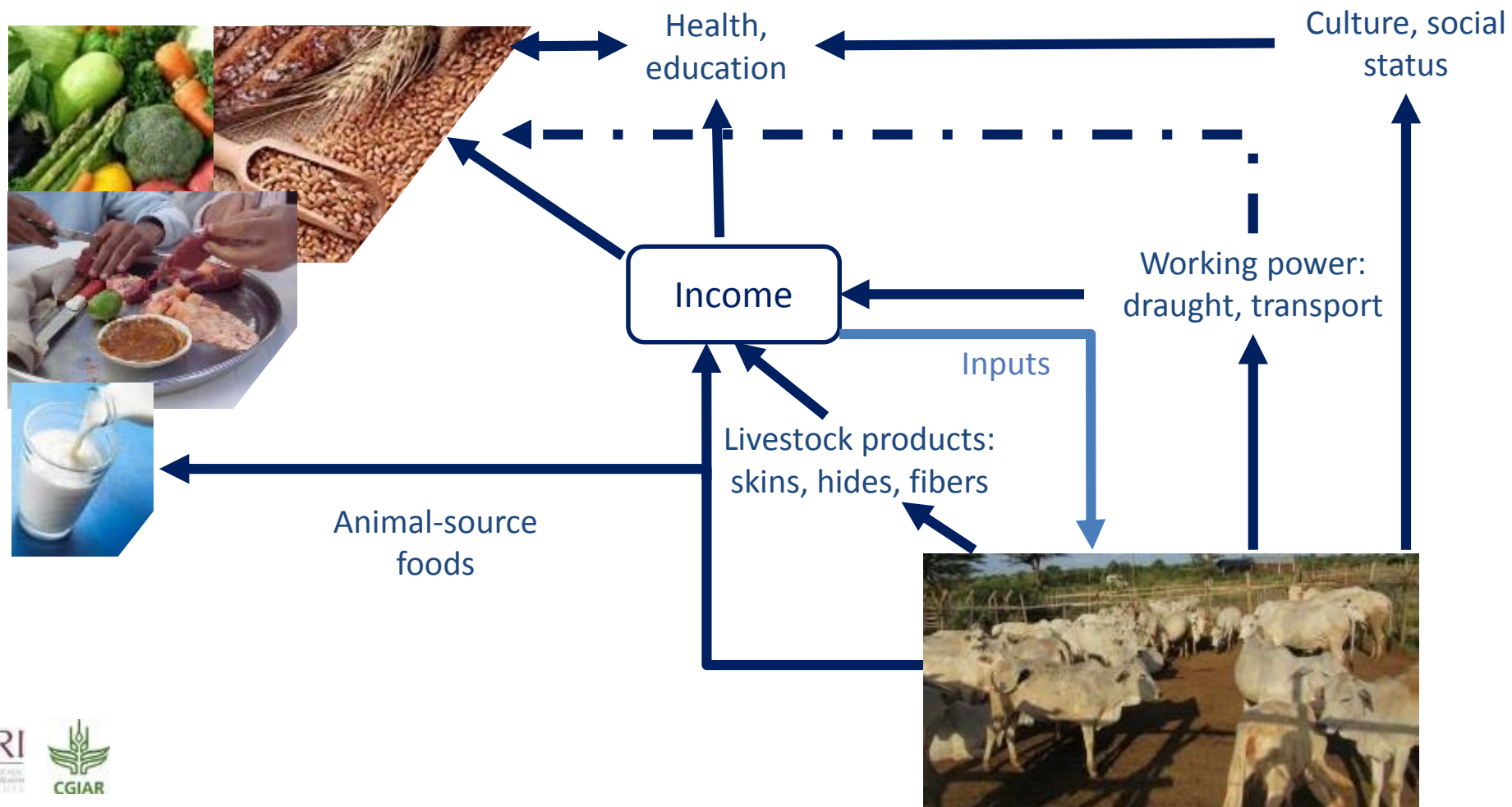
|                             | Animal level | Herd level |
|-----------------------------|--------------|------------|
| Chlamydia                   | 57.9%        | 89.2%      |
| Toxoplasma                  | 38.0%        | 68.3%      |
| Coxiella Burnetti (Q-fever) | 39.8%        | 70.8%      |
| Brucella                    | 0%           | 0%         |



# Animal diseases

- Globally disease reduces livestock productivity by 25% - valued at US \$300 billion per year
- Livestock diseases cost Africa between US \$ 9 – 35 billion per year

# Animals and human nutrition



# Importance of livestock

## FGDs and household gender survey in Ethiopia



**“Sheep are like money in a pocket”**

**“Sheep are like ‘Injera’ ready to be eaten”**

**“ Fast growing cabbage in the homestead”**

- Docile easy to managed
- Goat milk/meat used as medicine



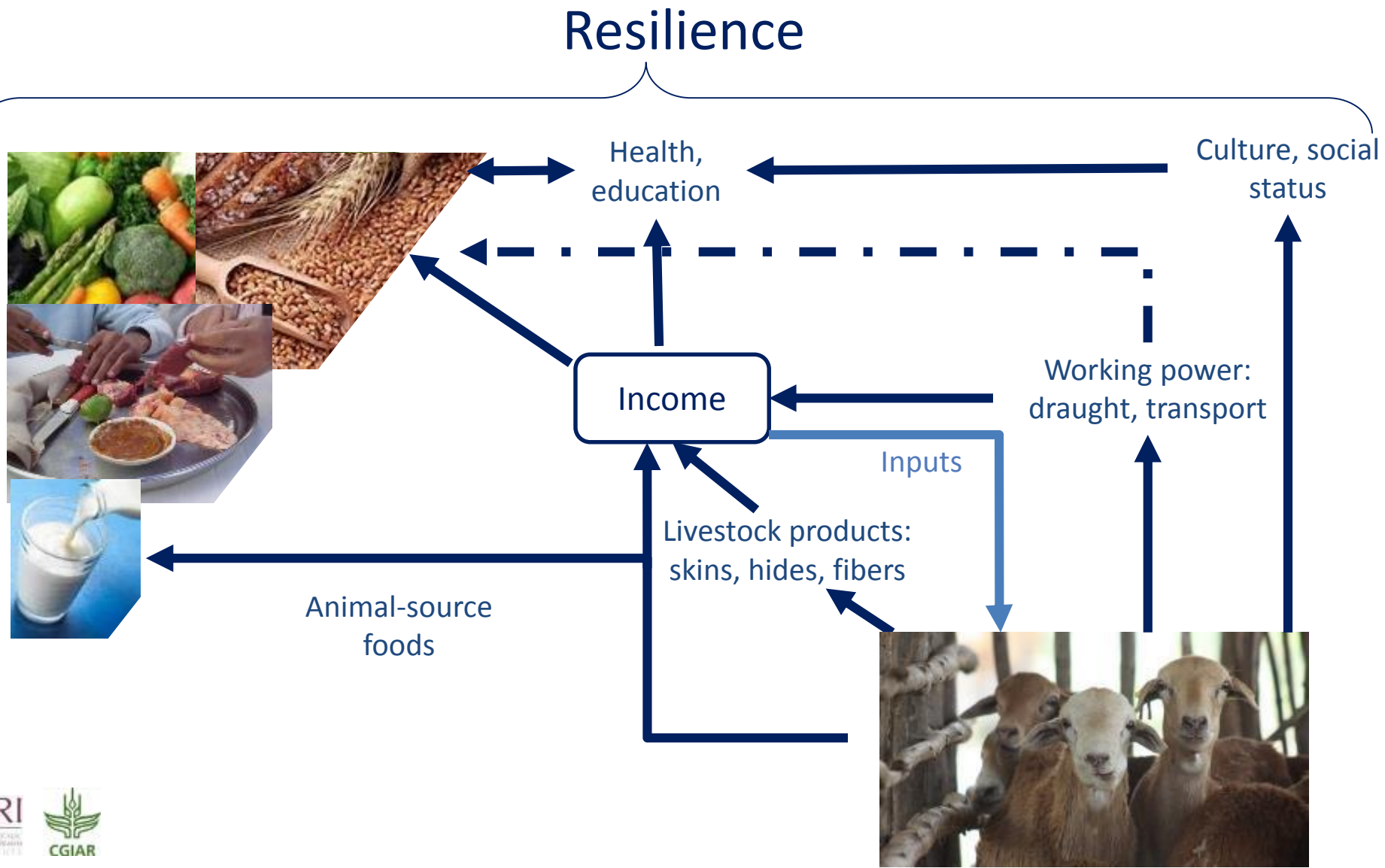
**“cattle are bank for owners”**

- Ploughing and threshing crops
- Traditional festivity/social ceremonies
- Manure for fuel and fertilizer
- Hides used as bed sheet



- Pack animal
- Ploughing and compacting of land and threshing
- Cash income either through selling or renting
- Horses riding in traditional ceremonies
- Donkey milk as medicine

# Animals and human nutrition



# Conclusions

- Livestock crucial for food security for poor small holders
  - Need to understand complexity of food systems given the rapid changes to ensure sustainability
  - Role of gender
  - Need to close yield gap: focus on productivity, reduce food safety risks
- understand why things are the way they are

# What can we do?

From knowledge to action through community engagement

## Capacity building/R4D

- Biosecurity in pig farms Uganda: champion farmers
- Coenurosis control in Ethiopia

## Innovation platforms

- Bringing together stakeholders to jointly identify solutions

## Novel business models for service delivery

- Business hubs
- Collaborate with private sector



# Thank you for your attention



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